

BASIC ELEMENTS OF SYSTEM FOR ANALYSIS OF VARIABLES

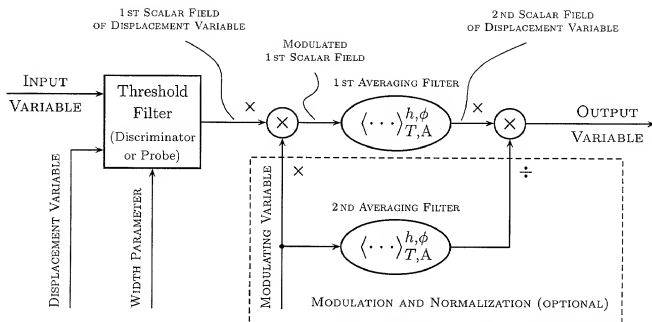


Fig. 1a

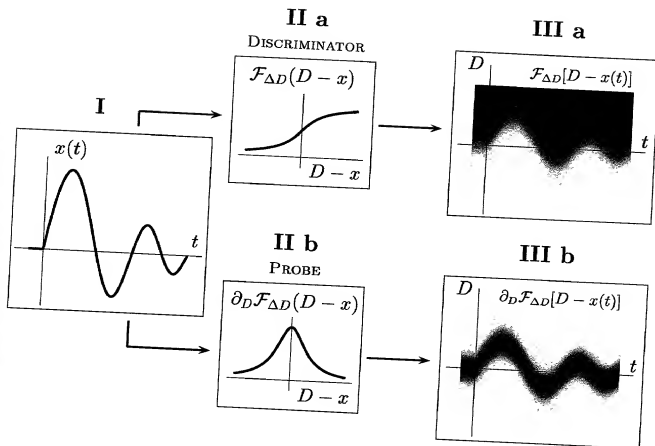


Fig. 1 b

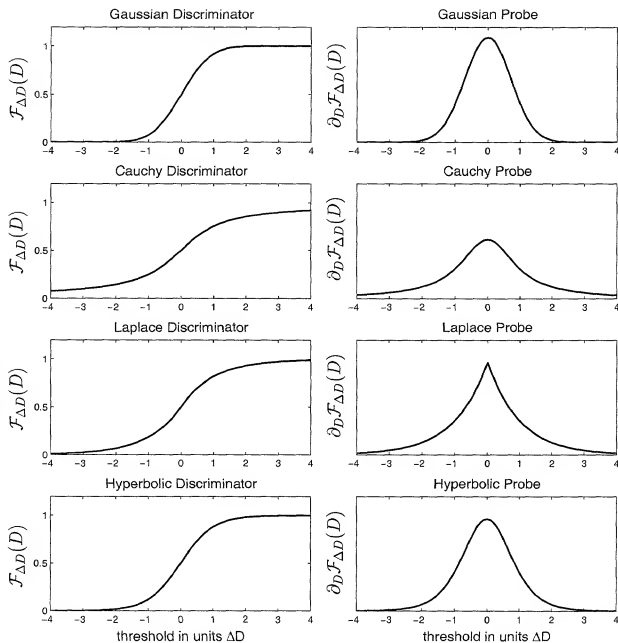


Fig. 2

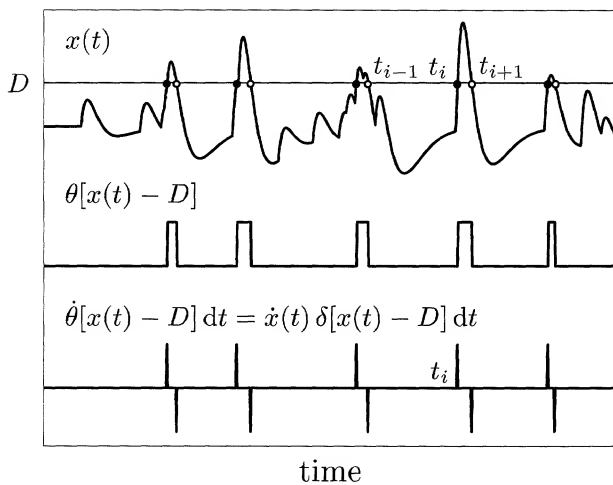


Fig. 3

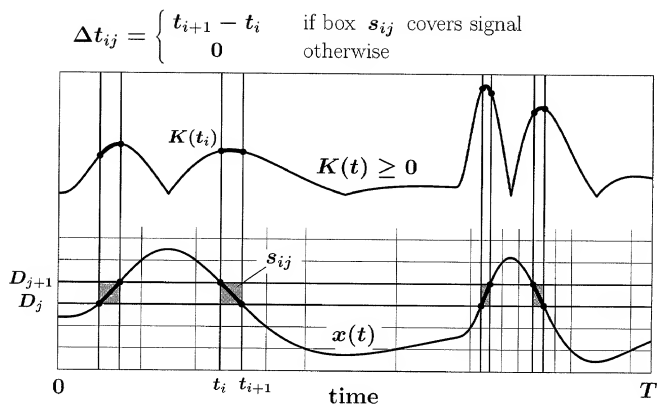


Fig. 4

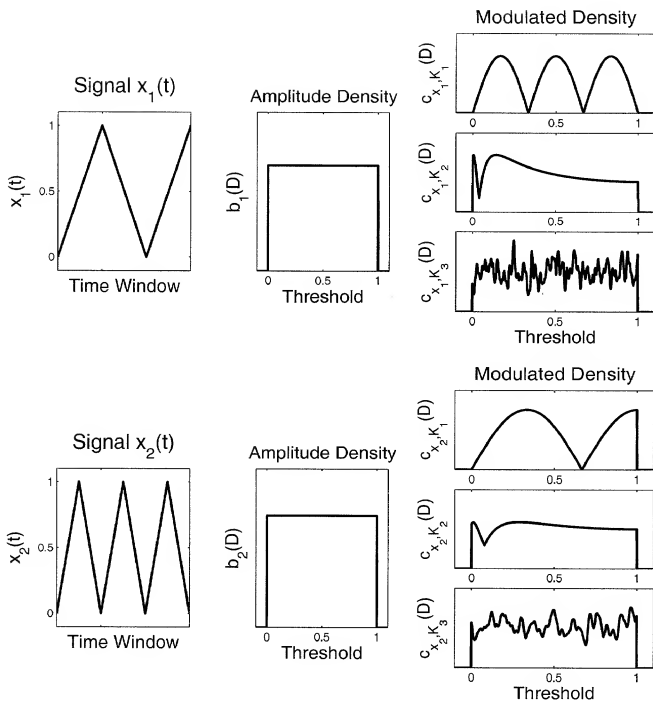


Fig. 5

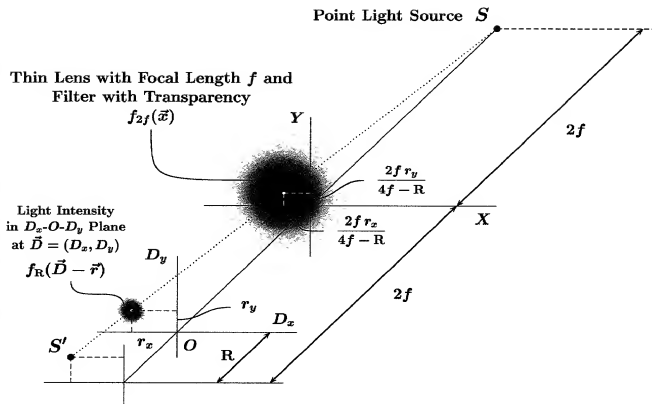
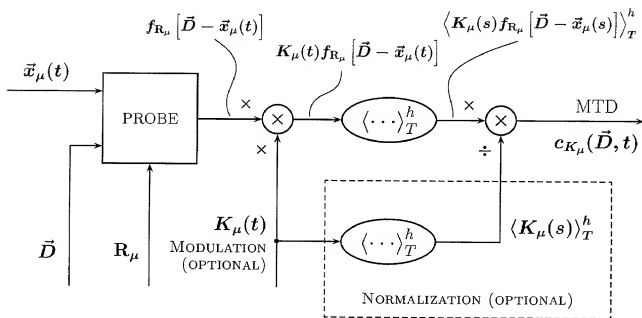


Fig. 6

MTD FOR SINGLE VARIABLE / COMPONENT OF ENSEMBLE



ACQUISITION SYSTEM: MEASURING DEVICE (PROBE)
 HAS INPUT-OUTPUT CHARACTERISTIC OF DIFFERENTIAL DISCRIMINATOR.

$\vec{x}_\mu(t)$ IS INPUT VARIABLE, SCALAR OR VECTOR, OR COMPONENT OF ENSEMBLE.
 E.G., SURFACE (IMAGE) GIVEN BY MATRIX CAN BE VIEWED AS DISCRETE ENSEMBLE.

\vec{D} AND R_μ ARE PARAMETERS OF PROBE. \vec{D} IS ANOTHER VARIABLE (NORMALLY OF SAME NATURE AS INPUT VARIABLE), SERVING AS UNIT, OR DATUM. R_μ IS WIDTH, OR RESOLUTION, PARAMETER.

$K_\mu(t)$ IS MODULATING VARIABLE, GENERALLY OF DIFFERENT NATURE THAN INPUT VARIABLE. E.G., $K_\mu(t) = \text{constant}$ LEADS TO MTD AS AMPLITUDE DENSITY, AND $K_\mu(t) = |\dot{\vec{x}}_\mu(t)|$ LEADS TO MTD AS COUNTING DENSITY/RATE.

Fig. 7

00000-1251260

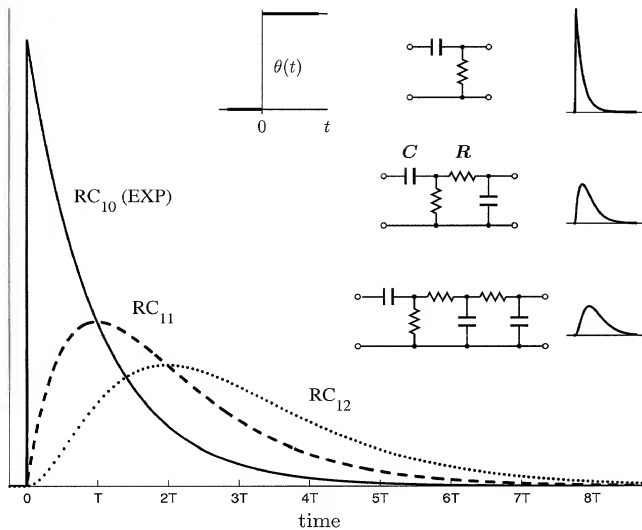


Fig. 8

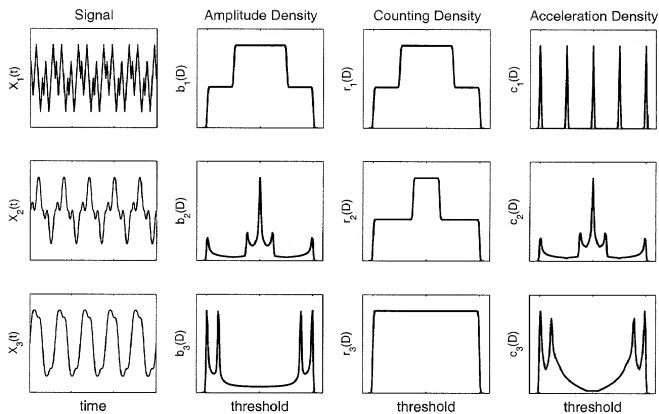


Fig. 9 a

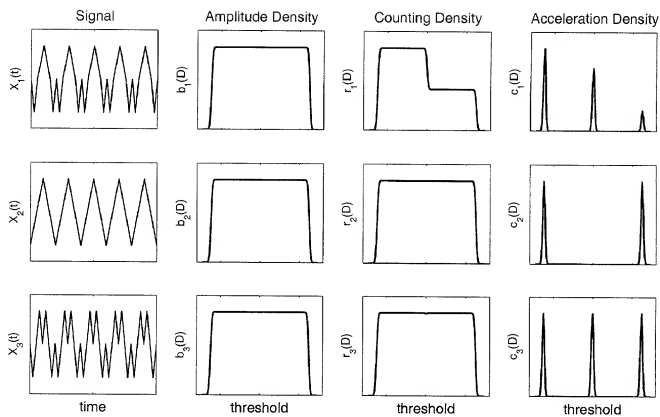


Fig. 9 b

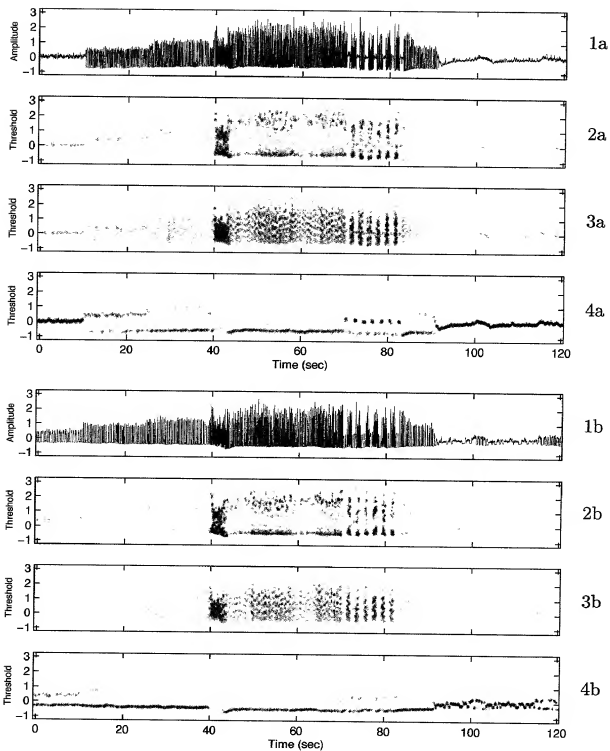


Fig. 10

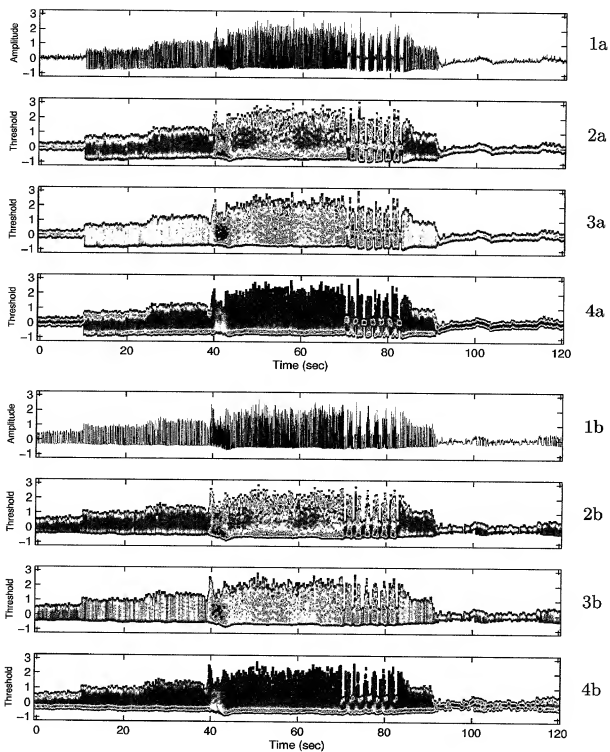


Fig. 10

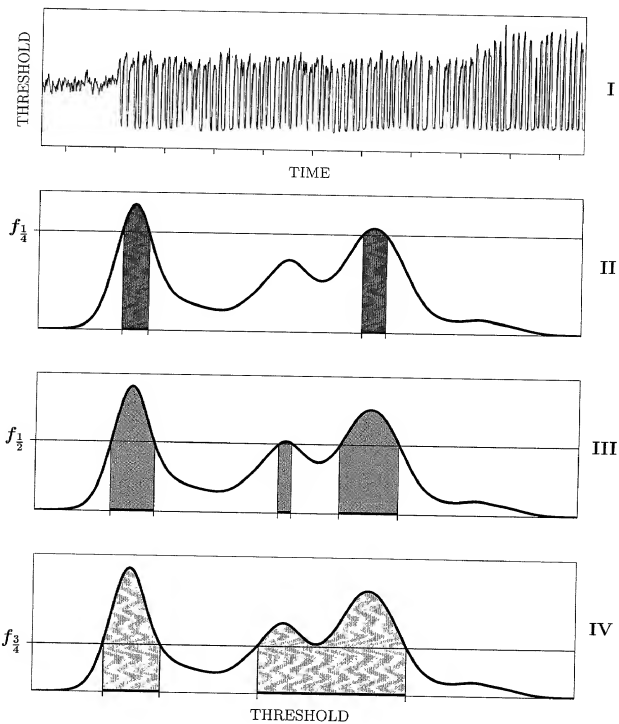


Fig. 11

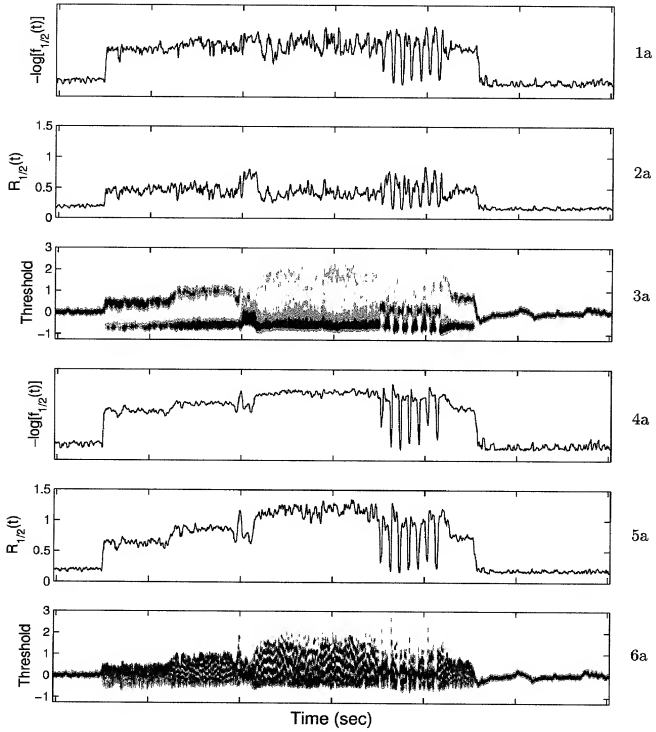


Fig. 12 a

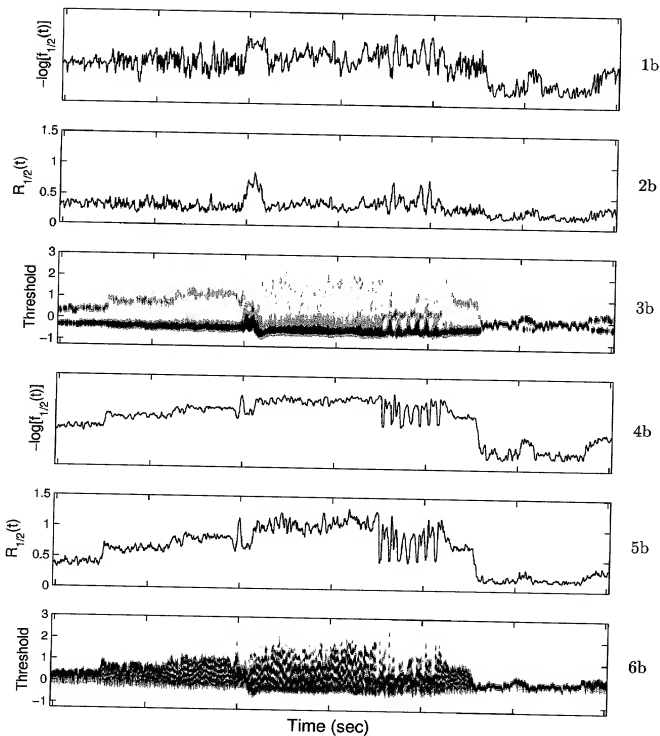


Fig. 12b

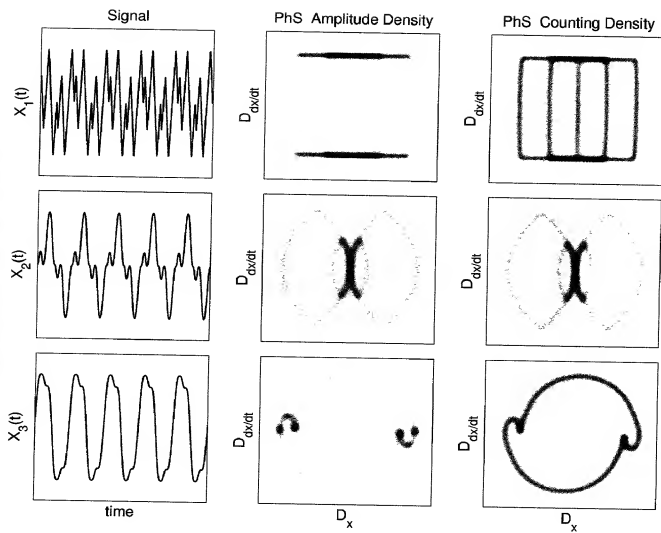


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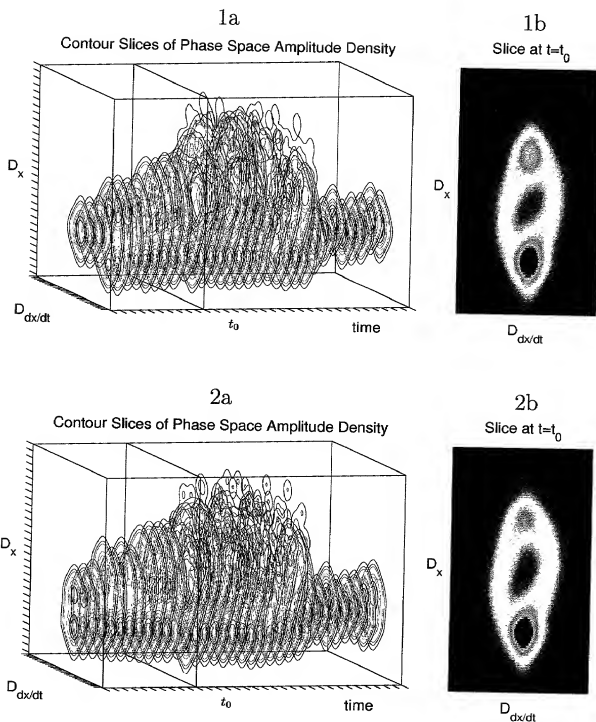


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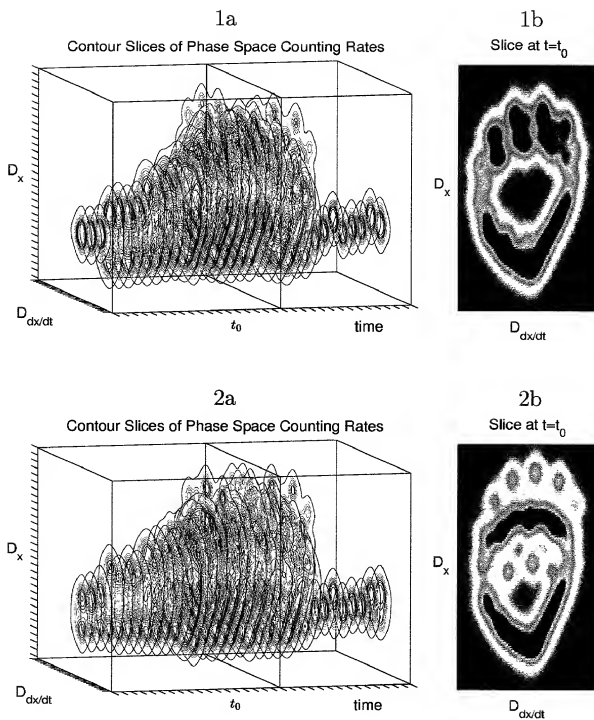


Fig. 15

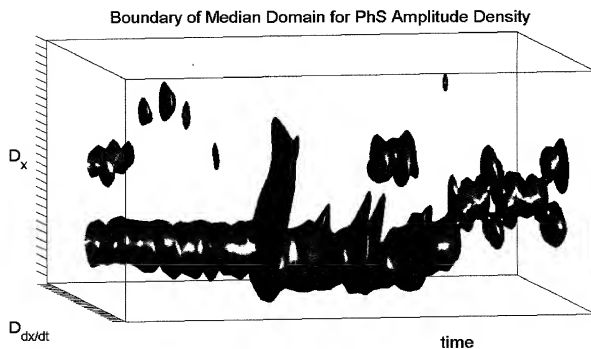
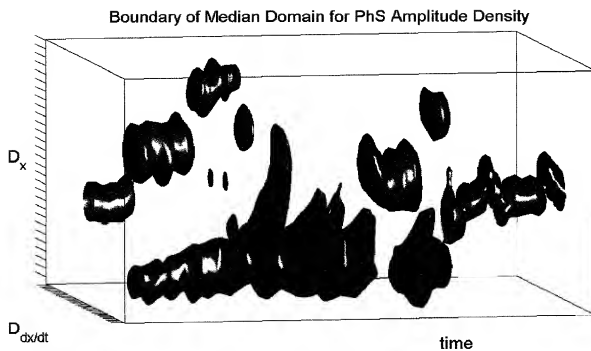


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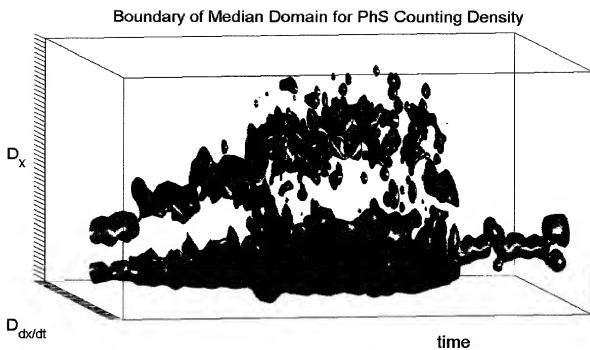
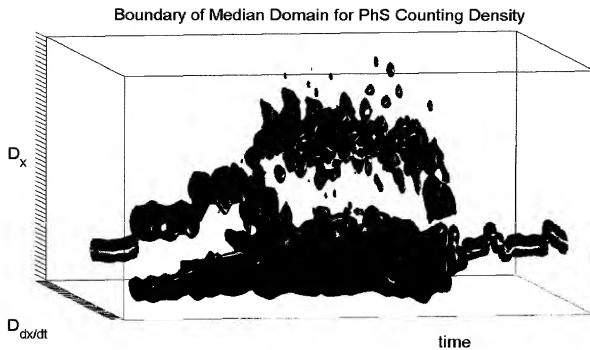


Fig. 17

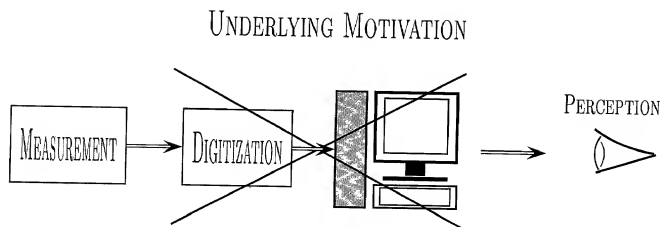


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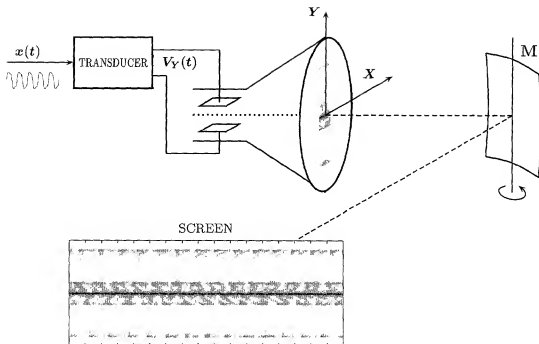


Fig. 19

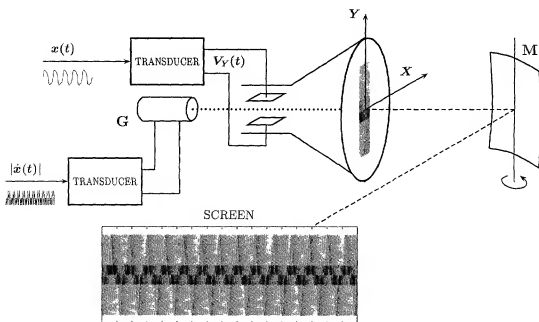


Fig. 20

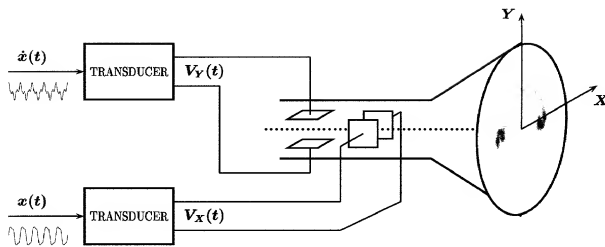


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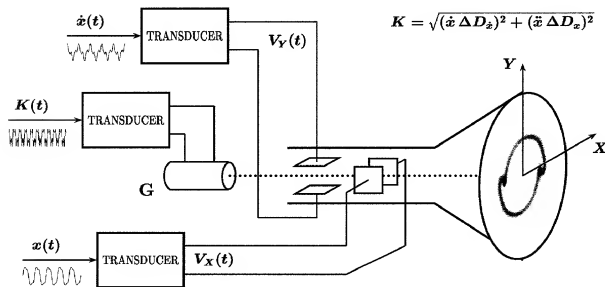


Fig. 22

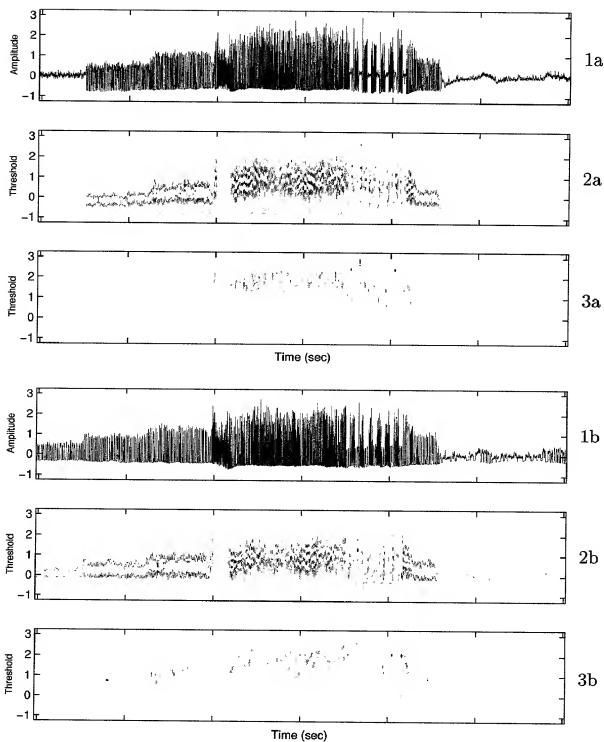


Fig. 23

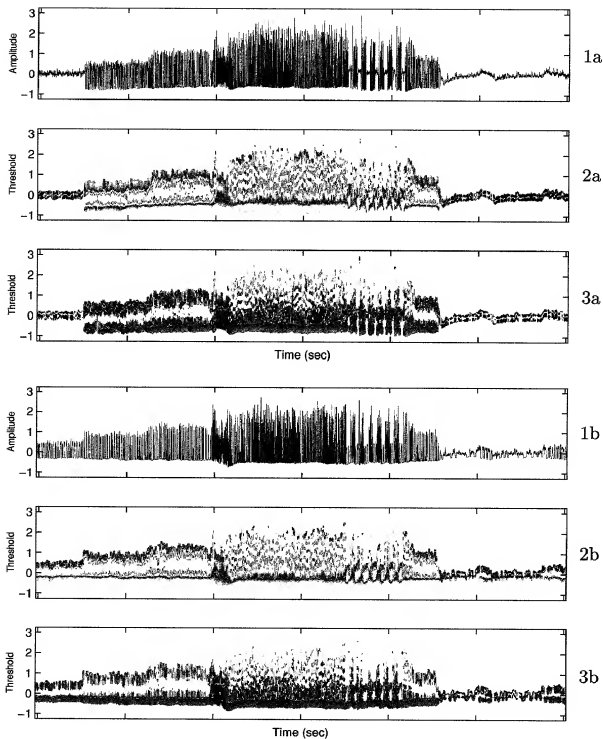


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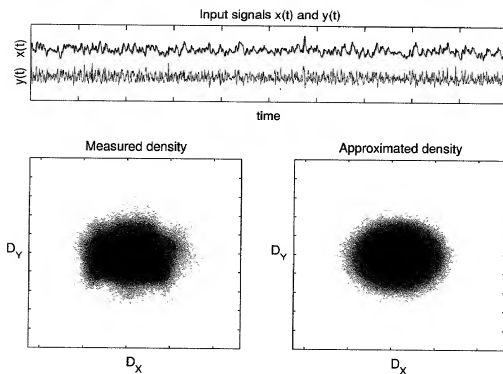


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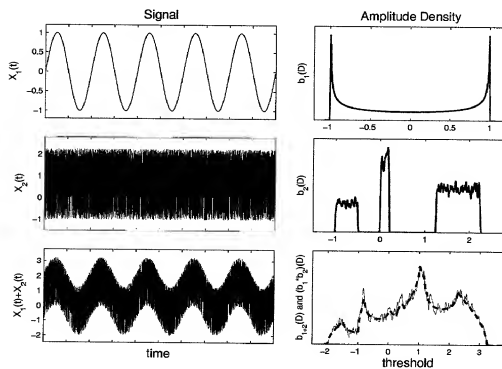


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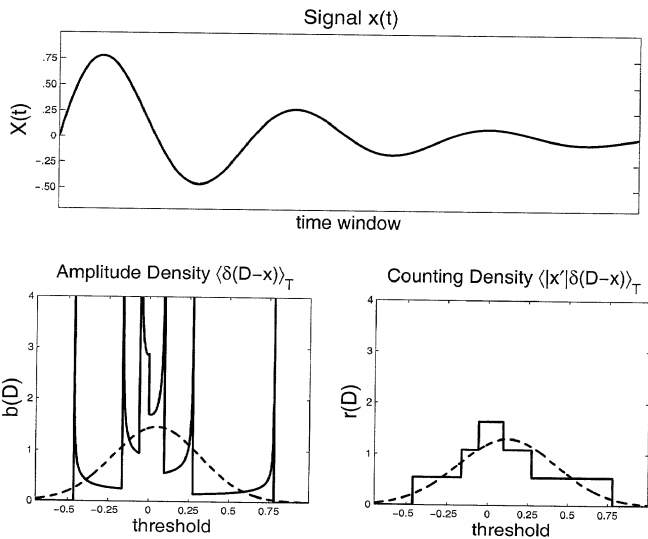


Fig. 26

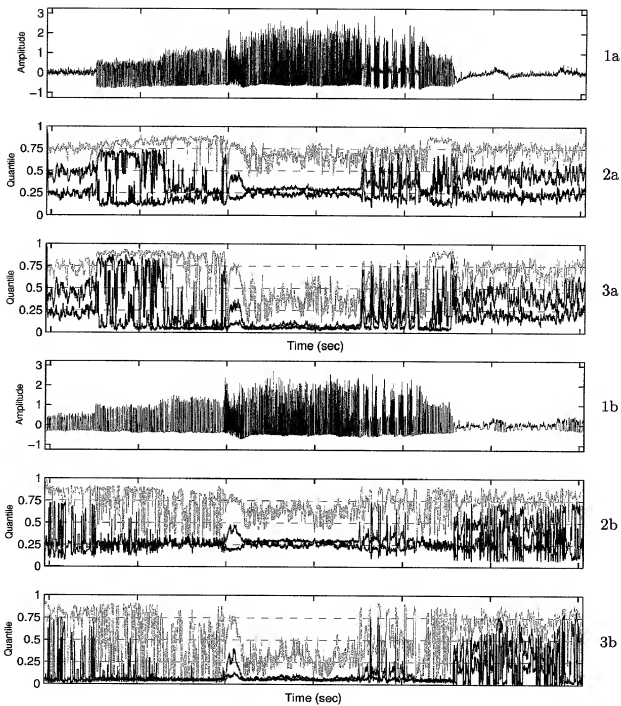


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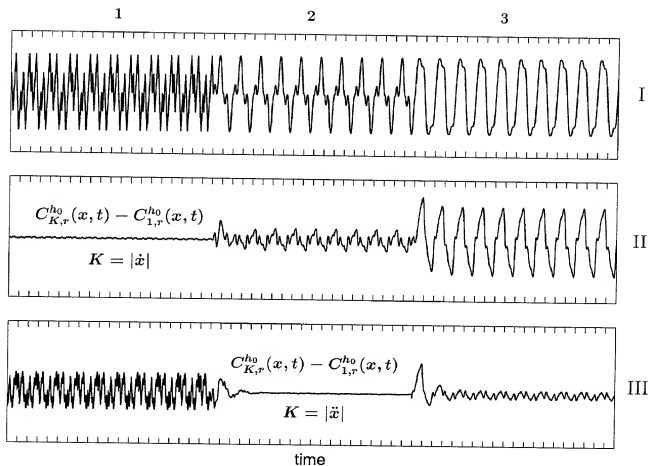


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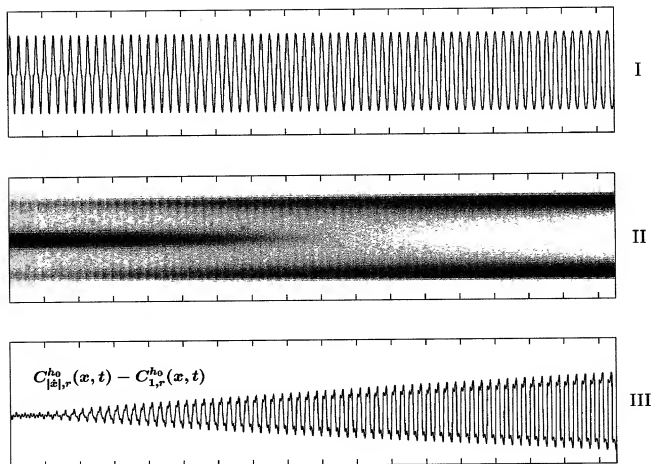


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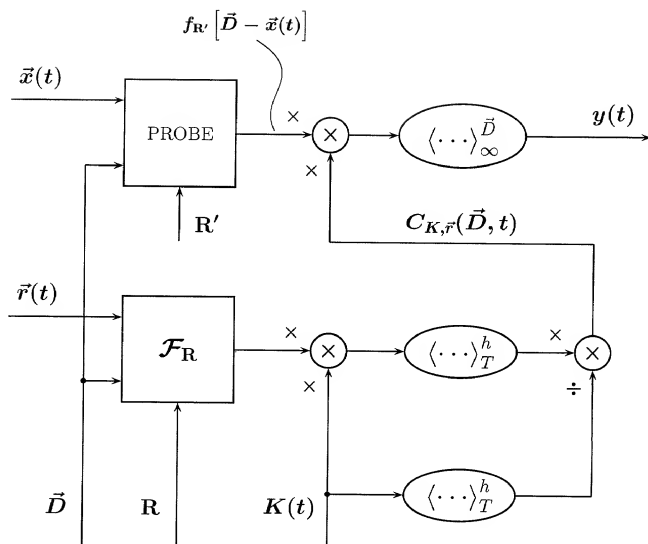


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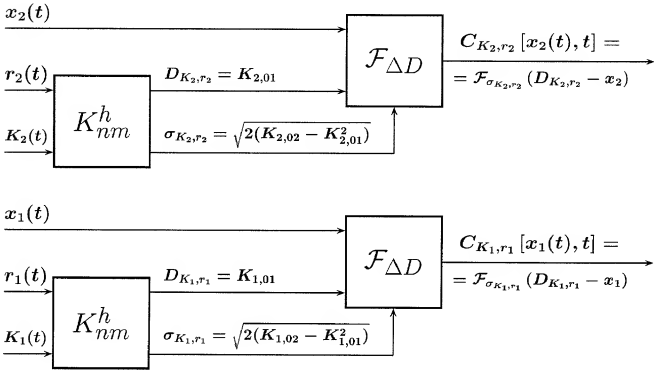
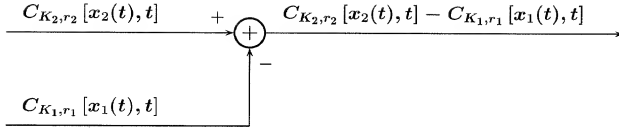


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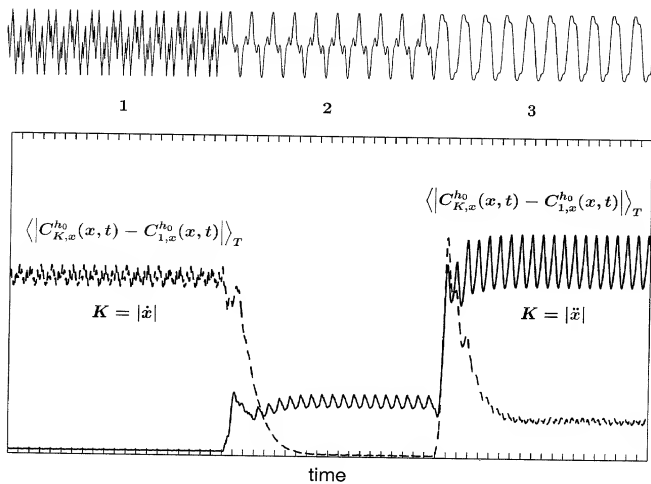


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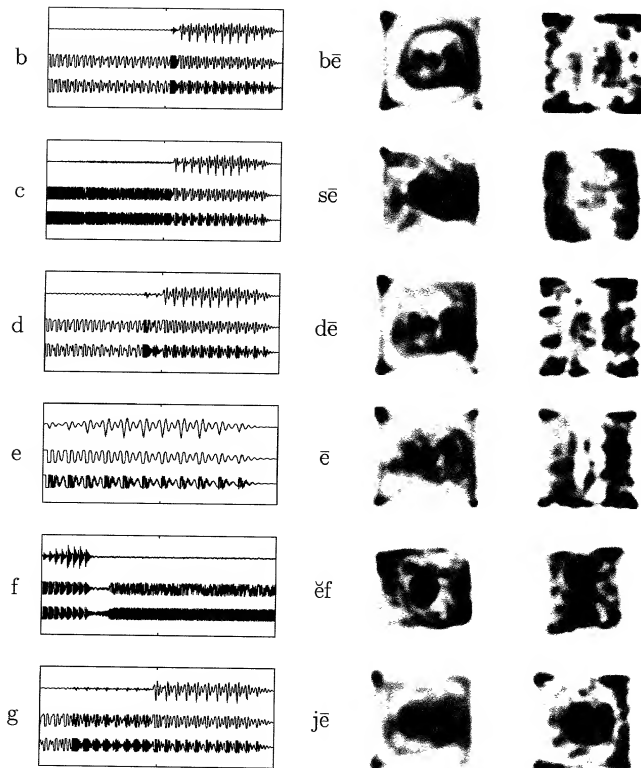


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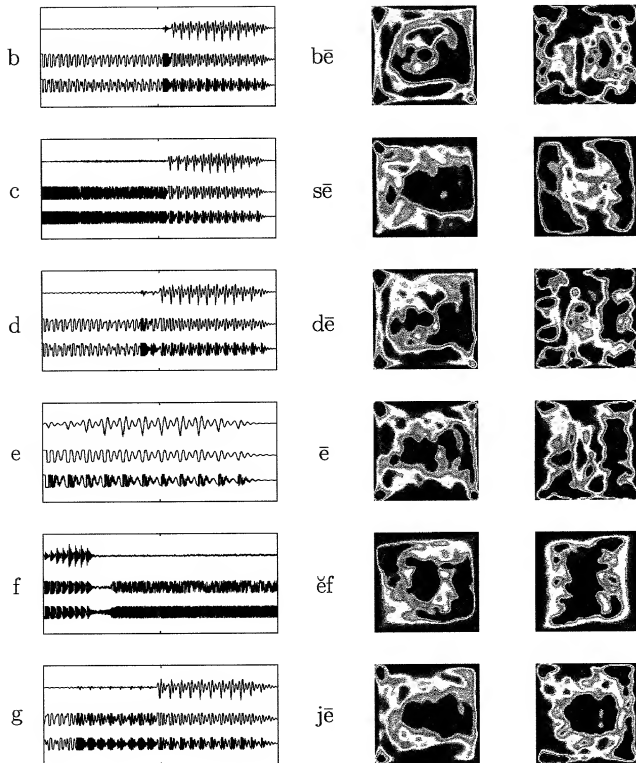


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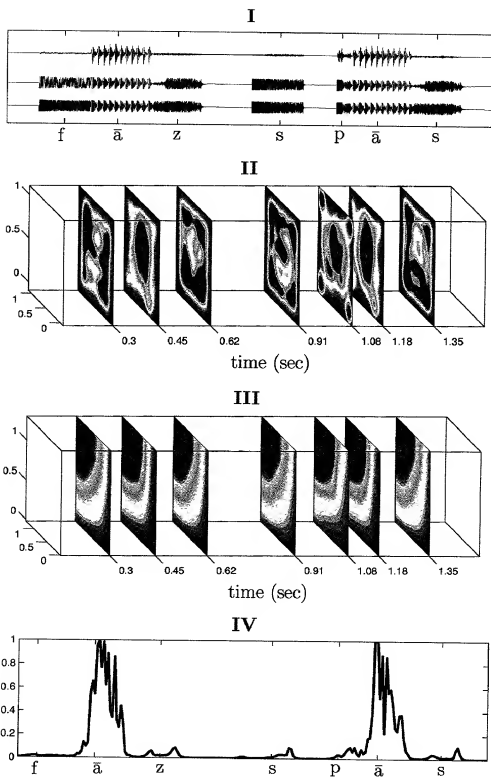


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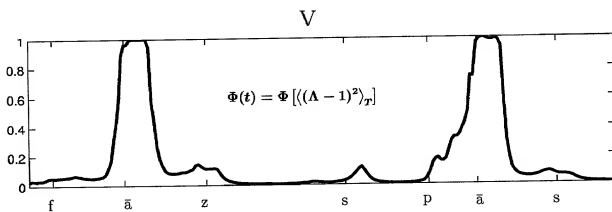
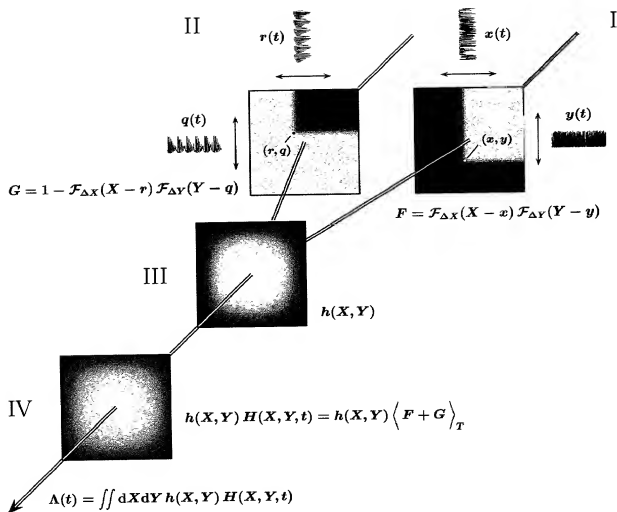


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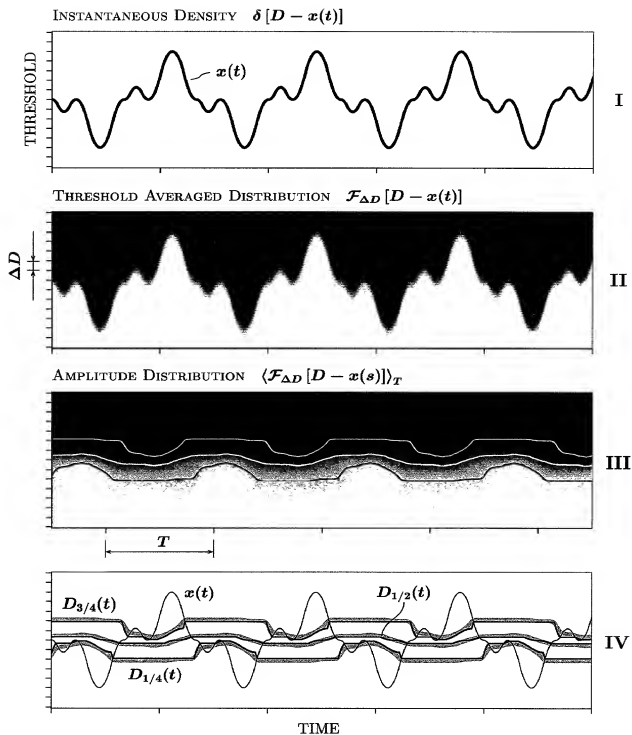


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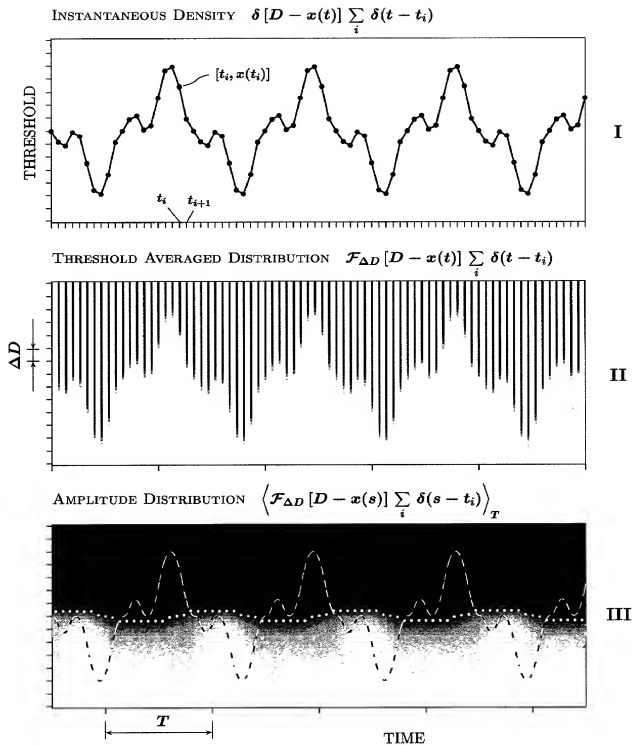


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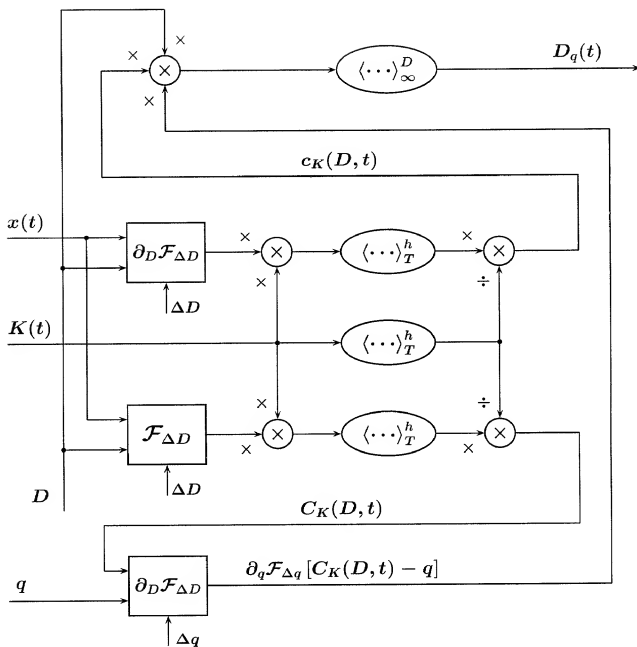


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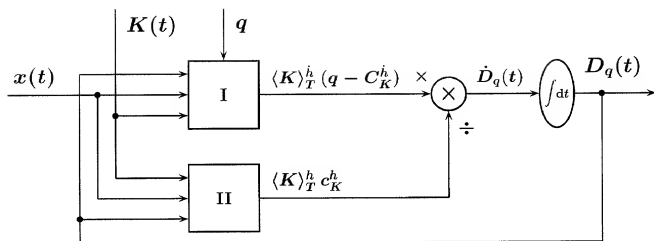


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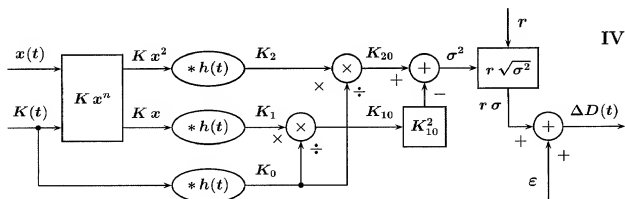
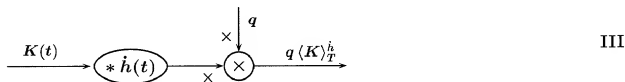
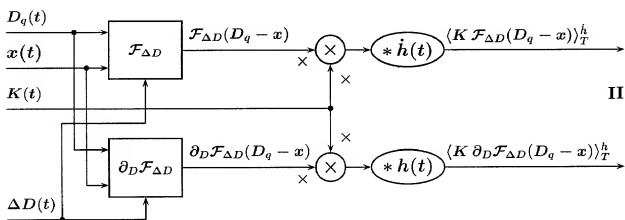
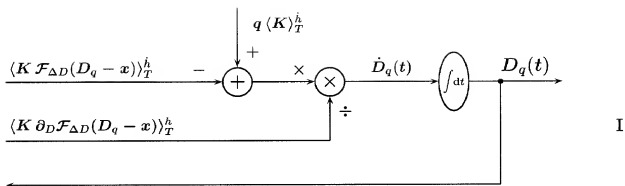


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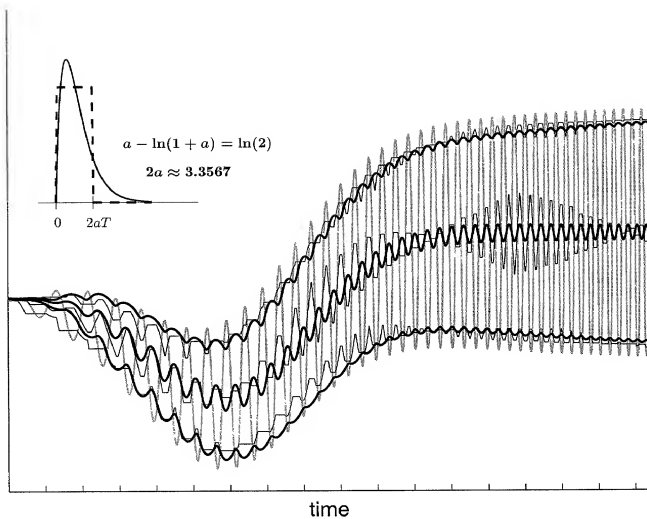


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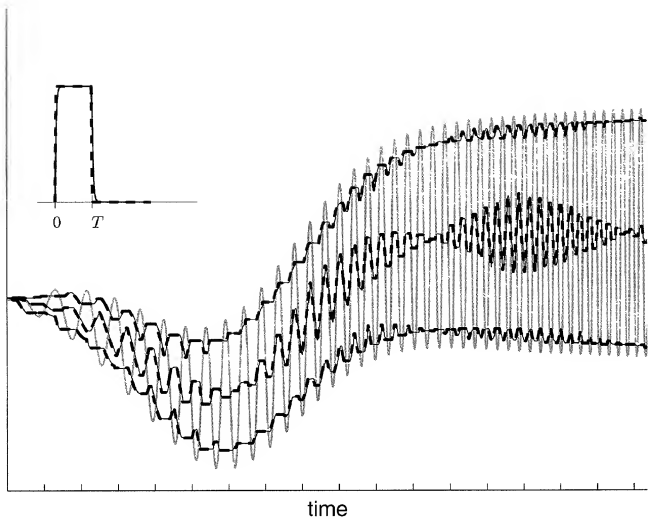


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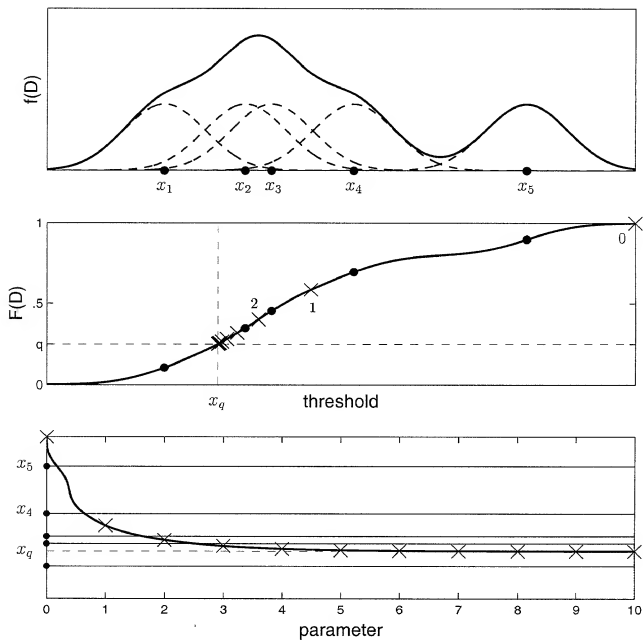


Fig. 43

Fig. 44

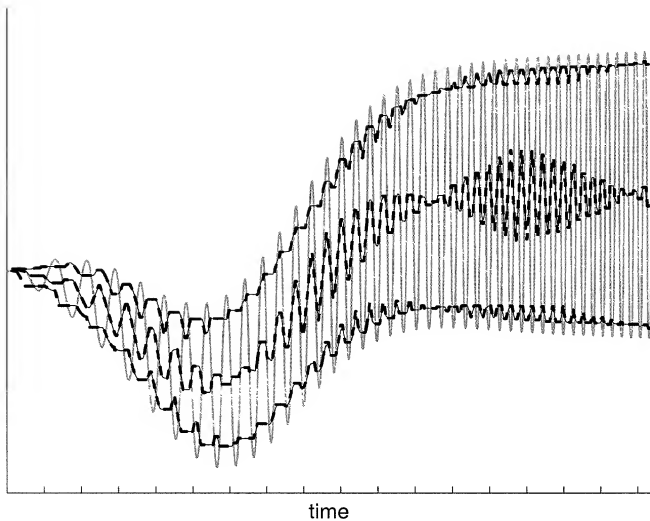


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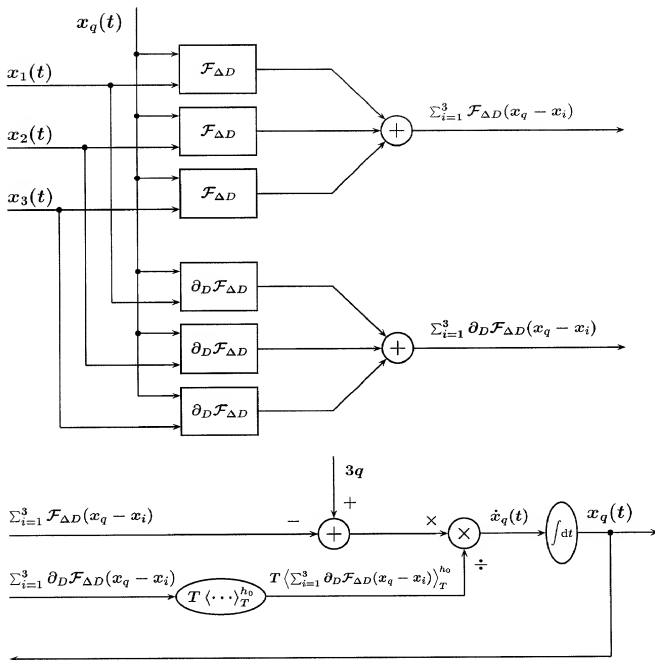


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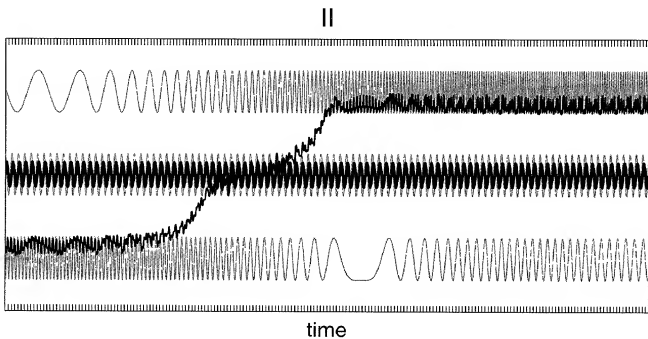
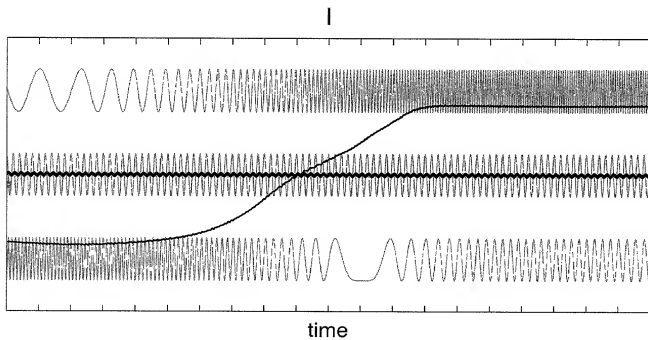
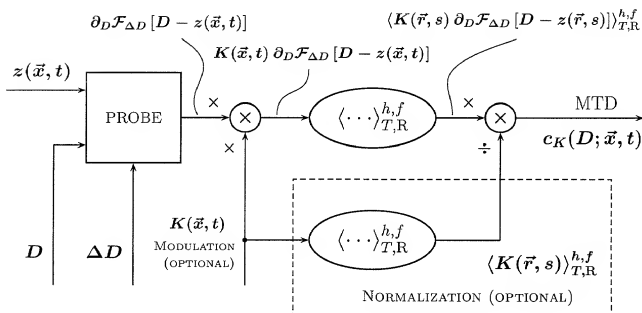


Fig. 47

MTD FOR SCALAR FIELD



ACQUISITION SYSTEM: MEASURING DEVICE (PROBE)

HAS INPUT-OUTPUT CHARACTERISTIC OF DIFFERENTIAL DISCRIMINATOR.

$z(\vec{x}, t)$ IS INPUT SCALAR VARIABLE (FIELD). E.G., MONOCHROME 2D-SURFACE (IMAGE) CAN BE VIEWED EITHER AS CONTINUOUS 2D SCALAR FIELD, OR AS DISCRETE ENSEMBLE OF VARIABLES.

D AND ΔD ARE PARAMETERS OF PROBE. D IS DISPLACEMENT, OR THRESHOLD. IT IS ANOTHER VARIABLE (NORMALLY OF SAME NATURE AS INPUT VARIABLE), SERVING AS UNIT, OR DATUM. ΔD IS WIDTH, OR RESOLUTION, PARAMETER OF PROBE.

$K(\vec{x}, t)$ IS MODULATING VARIABLE, GENERALLY OF DIFFERENT NATURE THAN INPUT VARIABLE. E.G., $K(\vec{x}, t) = \text{constant}$ LEADS TO MTD AS AMPLITUDE DENSITY, AND $K(\vec{x}, t) = |\dot{z}(\vec{x}, t)|$ LEADS TO MTD AS COUNTING DENSITY/RATE.

Fig. 48

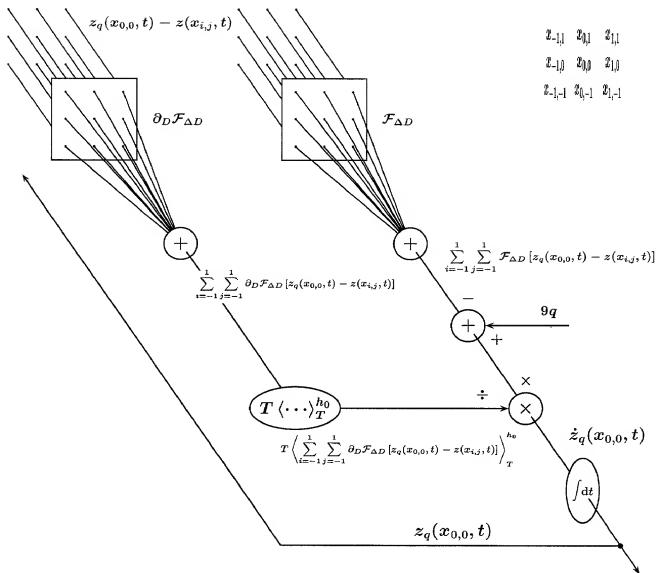


Fig. 49

1



2



3a ($n = 0$)



3b ($n = N$)



3c ($n = 2N$)



3d ($n = 3N$)



3e ($n = 4N$)



3f ($n = 6N$)



3g ($n = 10N$)



Fig. 50

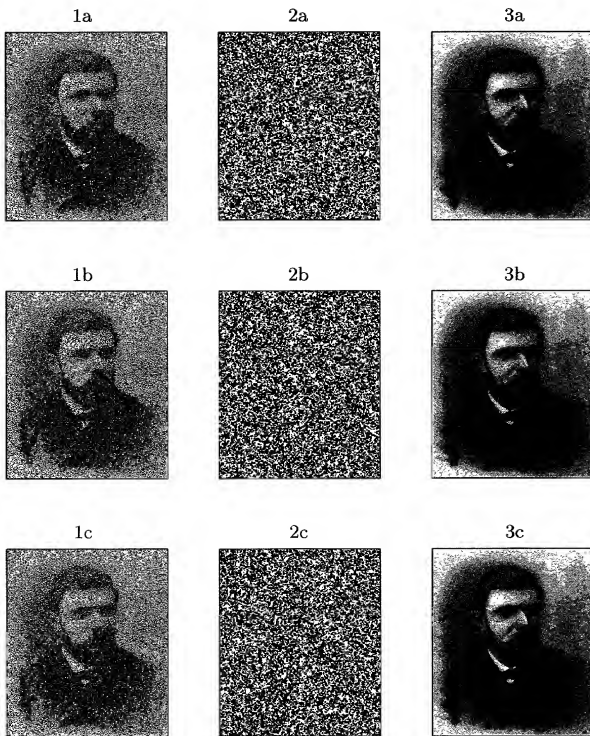
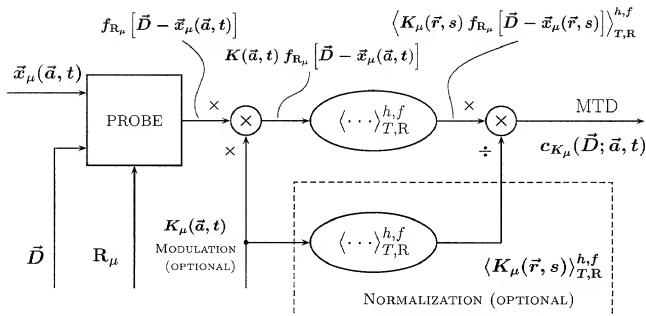


Fig. 51

MTD FOR COMPONENT OF ENSEMBLE OF VECTOR FIELDS



ACQUISITION SYSTEM: MEASURING DEVICE (PROBE)

HAS INPUT-OUTPUT CHARACTERISTIC OF DIFFERENTIAL DISCRIMINATOR.

$\vec{x}_\mu(\vec{a}, t)$ IS INPUT VECTOR VARIABLE (FIELD). E.G., TRUCOLOR IMAGE CAN BE VIEWED AS CONTINUOUS 3D VECTOR FIELD (WITH 2D POSITION VECTOR \vec{a}).

\vec{D} AND R_μ ARE PARAMETERS OF PROBE. \vec{D} IS DISPLACEMENT, OR THRESHOLD. IT IS ANOTHER VARIABLE (NORMALLY OF SAME NATURE AS INPUT VARIABLE), SERVING AS UNIT, OR DATUM. R_μ IS WIDTH, OR RESOLUTION, PARAMETER.

$K_\mu(\vec{a}, t)$ IS MODULATING VARIABLE, GENERALLY OF DIFFERENT NATURE THAN INPUT VARIABLE. E.G., $K(\vec{a}, t) = \text{constant}$ LEADS TO MTD AS AMPLITUDE DENSITY, AND $K_\mu(\vec{a}, t) = |\vec{x}_\mu(\vec{a}, t)|$ LEADS TO MTD AS COUNTING DENSITY/RATE.

Fig. 52



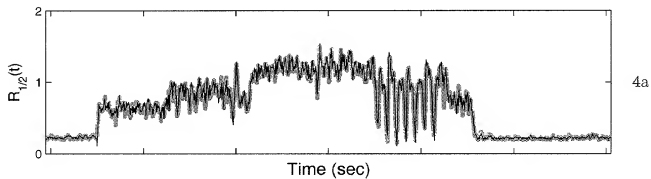
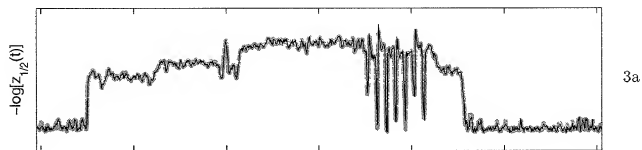
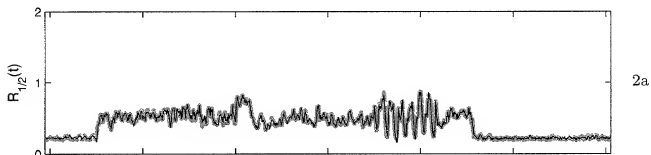
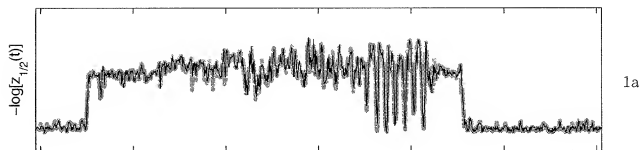


Fig. 54 a

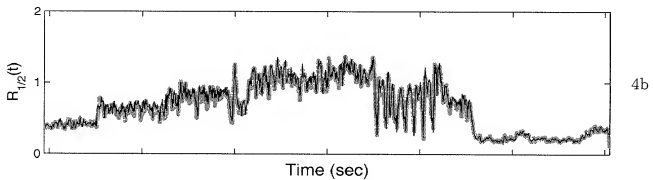
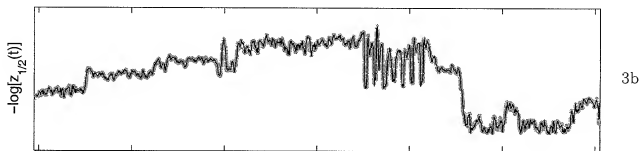
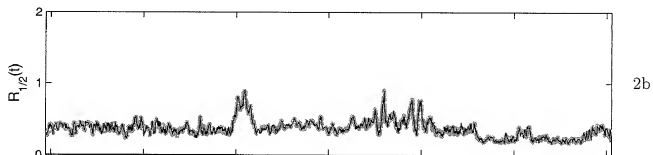
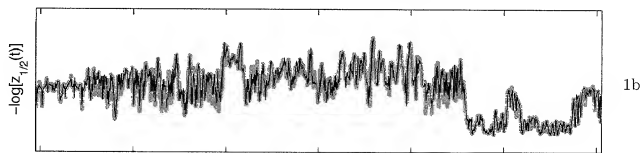


Fig. 54 b

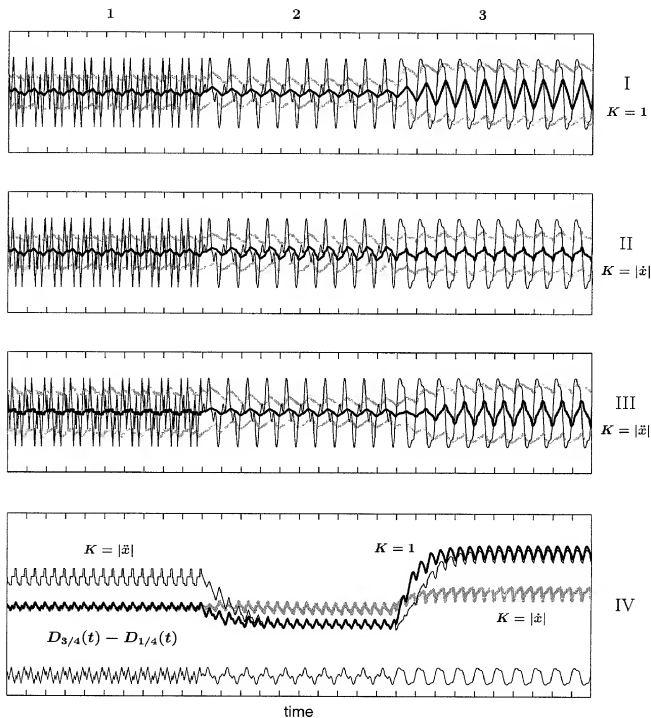


Fig. 55

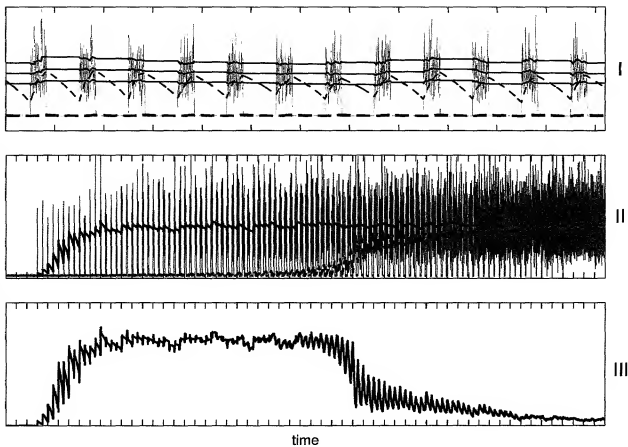


Fig. 56

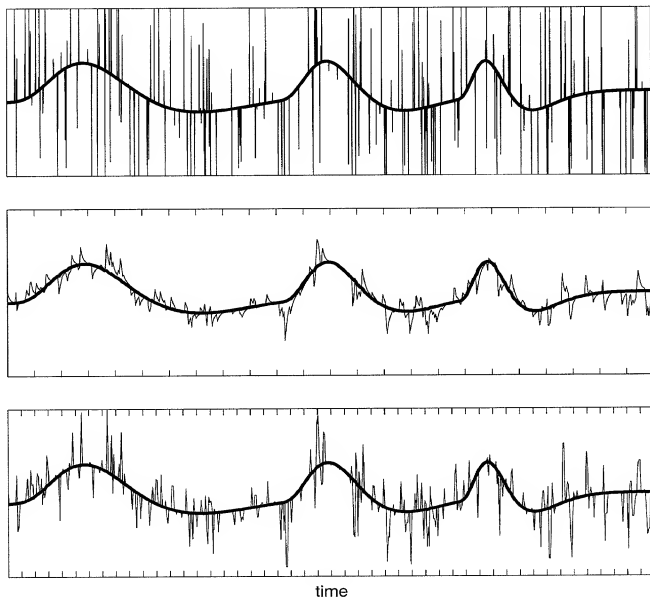


Fig. 57

09021524.080304

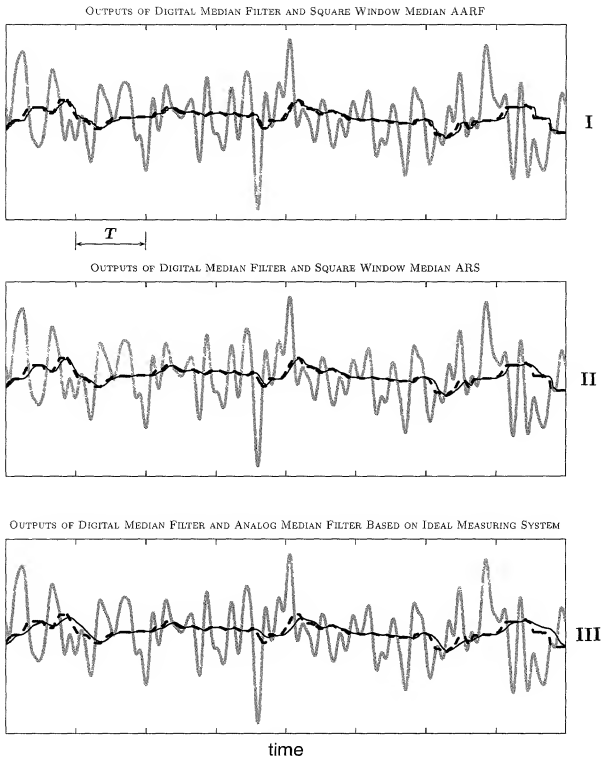


Fig. 59 a

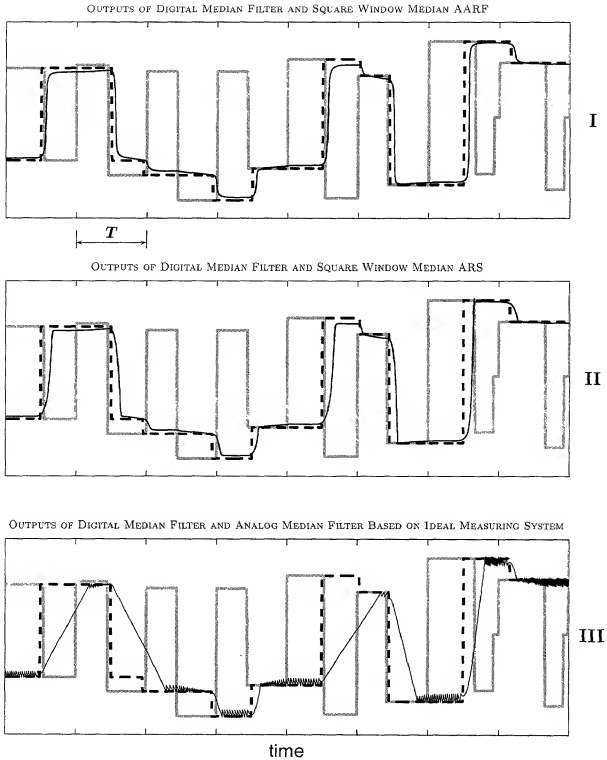
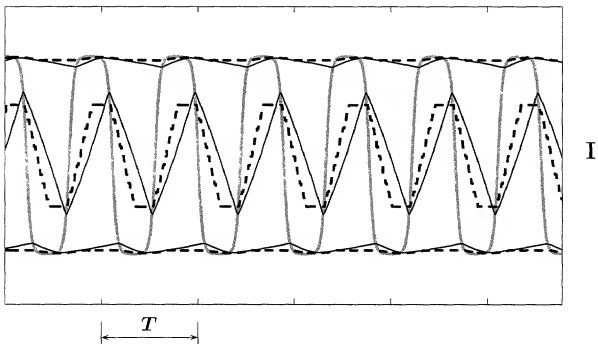


Fig. 59b

QUARTILE OUTPUTS OF DIGITAL RANK ORDER FILTER AND RC_{10} AARF



QUARTILE OUTPUTS OF DIGITAL RANK ORDER FILTER
 AND RC_{10} ARF BASED ON IDEAL MEASURING SYSTEM

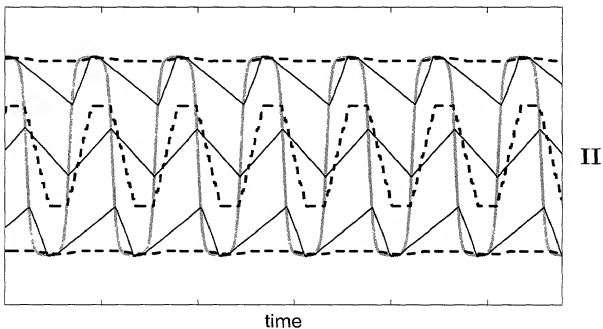


Fig. 60

TRANSFORMING INPUT VARIABLE INTO MRT VARIABLE

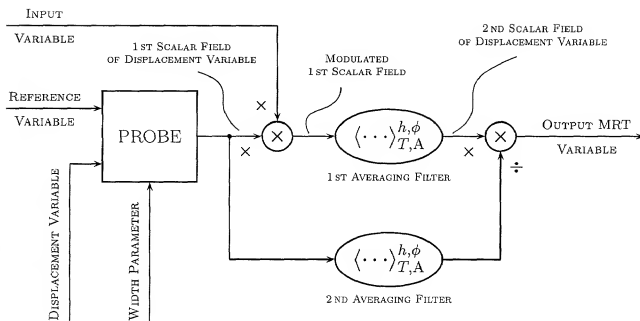


Fig. 61

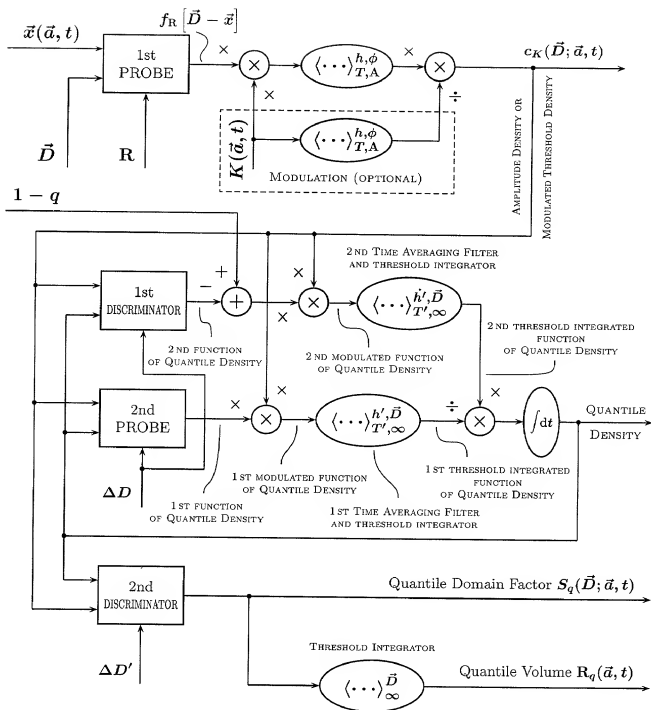


Fig. 62

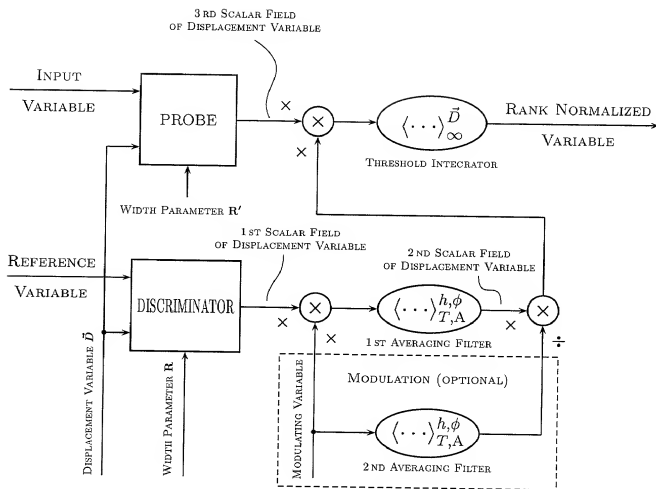


Fig. 63

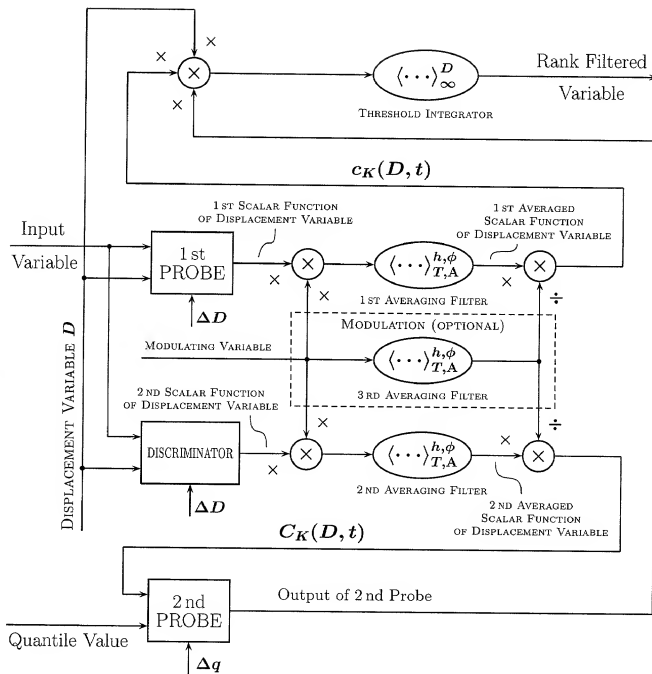


Fig. 64

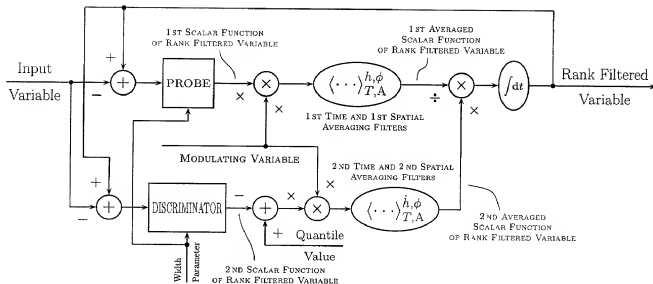


Fig. 65

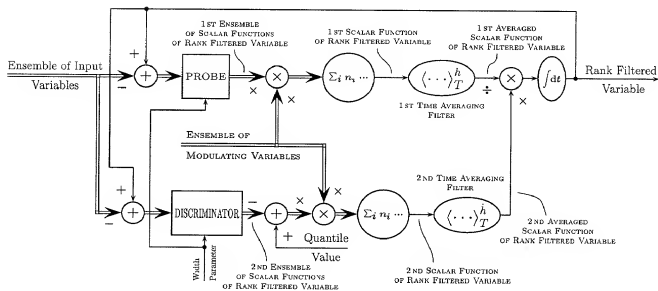


Fig. 66